

August 31, 2006

MEMORANDUM

TO: Mr. Steve Murray, P.L.S. - Tippecanoe County Surveyor

FROM: David W. Eichelberger, P.E. - CBBEL, Indianapolis

PROJECT: **Best Way Disposal Trash Transfer Station
CBBEL Project No. 02-038 (FM)**

DEVELOPER/OWNER: **Best Way Disposal**

LOCATION: **40° 21' 55" Latitude
-86° 48' 19" Longitude**

RECOMMENDATION: **Final Approval with Conditions**

A trash transfer station will be constructed on 10.6 acres of existing farm land located in Sheffield Township on the south side of County Road 350 South, approximately 1,000 feet east of the intersection of County Roads 350 South and 500 East. The construction of the transfer station will encompass 1.5 acres of the project site; the remaining 9.1 acres will be converted to grass. A paved driveway area from County Road 350 South will provide access to, and traffic control for, the proposed 10,000 square-foot building. Drainage swales will be constructed around the perimeter of the driveway/building area to convey stormwater north to the existing county road ditch from three (3) separate release points located in the northwest and northeast corners of the property. Additionally, these vegetated swales will function as post-construction stormwater quality measures for the development. Trash transfer operations will be contained within the building and a system of drains will be installed to capture and store any liquid released during trash handling activities. This liquid will be handled independently of any stormwater.

Based on submitted information, a portion of Branch 9 of the Elliott Ditch Regulated Drain is located on the subject property, along the north property line and just south of County Road 350 South. The entrance drive and the swale outfalls will encroach into the regulated drain easement. This project will have an indirect outlet to Branch 9 of the Elliott Ditch Regulated Drain. The project site is located within the Elliott Ditch 305(b) Priority Watershed. Runoff from the site eventually discharges to Elliot Ditch.

This project was previously reviewed in a memorandum dated August 18, 2006. . After a review of the most recently provided information, CBBEL recommends final approval of the stormwater management plan with the following conditions:

Variances/Encroachments

1. The proposed entrance drive and swale outlets will encroach into the Branch 9 of Elliott Ditch Regulated Drain easement. The applicant has indicated that a request to reduce the easement width on the property to 40 feet and to encroach into the easement area is being coordinated with the Tippecanoe County Surveyor's Office. The proposed easement reduction and encroachments will also require final approval from the Tippecanoe County Drainage Board.

Stormwater Quantity

1. The applicant should review all of the submitted Time-of-Concentration (Tc) calculations. It does not appear that the Shallow Concentrated Flow velocity has been correctly estimated in the provided spreadsheets.
2. The drainage area delineations for Basin TA-5 on the Drainage Exhibits and the Existing Conditions Overall Map do not agree. The calculations use the drainage area value give on the Drainage Exhibits. All of the delineations and values for the drainage area for Basin TA-5 should agree.
3. Analyses of the downstream 15-inch diameter culvert pipe and 24-inch diameter tile have now been provided. Based on these analyses and information available to the Tippecanoe County Surveyor's Office, the downstream system, including the regulated drain tile, is not an adequate outlet. Therefore, the applicant will have to include on-site detention as part of the project to reduce runoff from the site to a level to be coordinated with the Tippecanoe County Surveyor's Office.

Stormwater Quality

1. The post-construction stormwater quality treatment measures proposed for the site are vegetated swales. If properly designed, a 60% Total Suspended Solids (TSS) removal rate would be accomplished for each vegetated swale prior to discharging into the roadside ditch at County Road 350 South. However, higher treatment efficiency rates for the swales cannot be achieved by lengthening the swales beyond an optimum distance. Therefore, the post-construction water quality measures must be redesigned or alternative measures employed to achieve the required 80% TSS removal rate.
2. The applicant should submit a completed "Recorded Master Covenant and Agreement Regarding On-Site BMP Maintenance and Drainage". This agreement must be recorded before final plan approval and sign-off will be granted by the Tippecanoe County Surveyor's Office.
3. An Operation and Maintenance (O&M) Manual should be provided for the post-construction stormwater quality treatment measures proposed for the project site.
4. The applicant has acknowledged that a Rule 6 National Pollutant Discharge Elimination System (NPDES) general permit for Storm Water Runoff Associated With Industrial Activity may be required from the Indiana Department of Environmental Management (IDEM) for this project and that a copy of this permit will be provided to the Tippecanoe County Surveyor's Office prior to the granting of Final Drainage Approval.

General Conditions

1. The applicant must present the project at the Tippecanoe County Drainage Board meeting for the project to be considered for approval
2. The applicant should still obtain approval from the Tippecanoe County Highway Department for all work proposed within the County Road 350 South Right-of-Way.
3. The applicant must pay any final drainage review fees per Ordinance 2005-04-CM and submit a letter to the County Surveyor's Office stating that these fees will be paid.
4. The applicant must pay the Phase II stormwater program fees.
5. All listed issues must be completely addressed before final plan approval and sign-off will be granted by the County Surveyor's Office.

No error or omission in the plans, calculations or applications (whether said plans, calculations or applications have been reviewed by the review engineer or not) shall permit or release the applicant and designer from constructing this work in any other manner than that provided for in the County Ordinance.

pc: TBIRD Engineering

DWE/kmd

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